Allen-Bradley

5069 Compact I/O Digital 16-point Sinking Input Modules

Catalog Numbers 5069-IB16, 5069-IB16F

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Product Overview

The 5069-IB16 and 5069-IB16F digital 16-point sinking input modules detect input transitions on field devices. That is, the modules detect when an input changes state from OFF to ON or from ON to OFF. The input modules convert input state transition signals to the appropriate logic level used in the controller.

5069 Compact I/O™ modules use the Producer-Consumer communication model. The Producer-Consumer communication model is an intelligent data exchange between modules and other system devices in which each module produces data without first being polled.

5069 Compact I/O systems are used with some Logix5000™ controllers and configured with the Studio 5000 Logix Designer® application. For more information on how which Logix5000 controllers and Logix Designer application versions are compatible with 5069 Compact I/O modules, see the publications listed in Additional Resources on page 15.

ATTENTION: Read this document and the documents listed in the Additional Resources section about installation, configuration and operation of this equipment before you install, configure, operate or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

注意：在安装、配置、操作和维护本产品前，请阅读本文档以及 “ 其他资源 ” 部分列出的有关设备安装、配置和操作的相应文档。除了所有适用规范、法律和标准的相关要求之外，用户还必须熟悉安装和接线说明。

安装、调整、投运、使用、组装、拆卸和维护等各项操作必须由经过适当训练的专业人员按照适用的操作规范实施。

如果未按照制造商指定的方式使用该设备，则可能会损害设备提供的保护。

ATENCIÓN: Antes de instalar, configurar, poner en funcionamiento o realizar el mantenimiento de este producto, lea este documento y los documentos listados en la sección Recursos adicionales acerca de la instalación, configuración y operación de este equipo. Los usuarios deben familiarizarse con las instrucciones de instalación y cableado y con los requisitos de todos los códigos, leyes y estándares vigentes.

El personal debidamente capacitado debe realizar las actividades relacionadas a la instalación, ajustes, puesta en servicio, uso, ensamblaje, desensamblaje y mantenimiento de conformidad con el código de práctica aplicable.

Si este equipo se usa de una manera no especificada por el fabricante, la protección provista por el equipo puede resultar afectada.

ATENÇÃO: Leia este e os demais documentos sobre instalação, configuração e operação do equipamento que estão na seção Recursos adicionais antes de instalar, configurar, operar ou manter este produto. Os usuários devem se familiarizar com as instruções de instalação e fiação além das especificações para todos os códigos, leis e normas aplicáveis.

É necessário que as atividades, incluindo instalação, ajustes, colocação em serviço, utilização, montagem, desmontagem e manutenção sejam realizadas por pessoal qualificado e especializado, de acordo com o código de prática aplicável.

Caso este equipamento seja utilizado de maneira não estabelecida pelo fabricante, a proteção fornecida pelo equipamento pode ficar prejudicada.

ВНИМАНИЕ: Перед тем как устанавливать, настраивать, эксплуатировать или обслуживать данное оборудование, прочитайте этот документ и документы, перечисленные в разделе «Дополнительные ресурсы». В этих документах изложены сведения об установке, настройке и эксплуатации данного оборудования. Пользователи обязаны ознакомиться с инструкциями по установке и прокладке соединений, а также с требованиями всех применимых норм, законов и стандартов.

Все действия, включая установку, наладку, ввод в эксплуатацию, использование, сборку, разборку и техническое обслуживание, должны выполняться обученным персоналом в соответствии с применимыми нормами и правилами.

Если оборудование используется не предусмотренным производителем образом, защита оборудования может быть нарушена.

注意：本製品を設置、構成、稼動または保守する前に、本書および本機器の設置、設定、操作についての参考資料の該当箇所に記載されている文書に目を通してください。ユーザは、すべての該当する条例、法律、規格の要件に加えて、設置および配線の手順に習熟している必要があります。

設置調整、運転の開始、使用、組立て、解体、保守を含む諸作業は、該当する実施規則に従って訓練を受けた適切な作業員が実行する必要があります。

本機器が製造メーカにより指定されていない方法で使用されている場合、機器により提供されている保護が損なわれる恐れがあります。

ACHTUNG: Lesen Sie dieses Dokument und die im Abschnitt „Literaturverweise“ genannten Dokumente zur Installation, Konfiguration und Bedienung dieser Ausrüstung sorgfältig durch, bevor Sie dieses Produkt installieren, konfigurieren, bedienen oder instandsetzen. Benutzer müssen sich mit den Anweisungen zur Installation und Verdrahtung vertraut machen und müssen die Anforderungen aller geltenden Vorschriften, Gesetze und Normen kennen.

Aktivitäten wie Installation, Einstellung, Inbetriebnahme, Verwendung, Montage, Demontage und Instandsetzung müssen durch ausreichend geschultes Personal in Übereinstimmung mit den geltenden Durchführungsvorschriften ausgeführt werden.

Wenn diese Ausrüstung in einer Weise verwendet wird, die nicht vom Hersteller angegeben wurde, kann der von der Ausrüstung bereitgestellte Schutz beeinträchtigt sein..

ATTENTION : Lisez ce document et les documents listés dans la section Ressources complémentaires relatifs à l’installation, la configuration et le fonctionnement de cet équipement avant d’installer, configurer, utiliser ou entretenir ce produit. Les utilisateurs doivent se familiariser avec les instructions d’installation et de câblage en plus des exigences relatives aux codes, lois et normes en vigueur.

Les activités relatives à l’installation, le réglage, la mise en service, l’utilisation, l’assemblage, le démontage et l’entretien doivent être réalisées par des personnes formées selon le code de pratique en vigueur.

Si cet équipement est utilisé d’une façon qui n’a pas été définie par le fabricant, la protection fournie par l’équipement peut être compromise.

주의 : 본 제품 설치 , 설정 , 작동 또는 유지 보수하기 전에 본 문서를 포함하여 설치 , 설정 및 작동에 관한 참고 자료 섹션의 문서들을 반드시 읽고 숙지하십시오 . 사용자는 모든 관련 규정 , 법규 및 표준에서 요구하는 사항에 대해 반드시 설치 및 배선 지침을 숙지해야 합니다 .

설치 , 조정 , 가동 , 사용 , 조립 , 분해 , 유지보수 등 모든 작업은 관련 규정에 따라 적절한 교육을 받은 사용자를 통해서만 수행해야 합니다 .

본 장비를 제조사가 명시하지 않은 방법으로 사용하면 장비의 보호 기능이 손상될 수 있습니다 .

ATTENZIONE Prima di installare, configurare ed utilizzare il prodotto, o effettuare interventi di manutenzione su di esso, leggere il presente documento ed i documenti elencati nella sezione “Altre risorse”, riguardanti l’installazione, la configurazione ed il funzionamento dell’apparecchiatura. Gli utenti devono leggere e comprendere le istruzioni di installazione e cablaggio, oltre ai requisiti previsti dalle leggi, codici e standard applicabili.

Le attività come installazione, regolazioni, utilizzo, assemblaggio, disassemblaggio e manutenzione devono essere svolte da personale adeguatamente addestrato, nel rispetto delle procedure previste.

Qualora l’apparecchio venga utilizzato con modalità diverse da quanto previsto dal produttore, la sua funzione di protezione potrebbe venire compromessa.

DİKKAT: Bu ürünün kurulumu, yapılandırılması, işletilmesi veya bakımı öncesinde bu dokümanı ve bu ekipmanın kurulumu, yapılandırılması ve işletimi ile ilgili İlave Kaynaklar bölümünde yer listelenmiş dokümanları okuyun. Kullanıcılar yürürlükteki tüm yönetmelikler, yasalar ve standartların gereksinimlerine ek olarak kurulum ve kablolama talimatlarını da öğrenmek zorundadır.

Kurulum, ayarlama, hizmete alma, kullanma, parçaları birleştirme, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimleri almış kişiler tarafından yürürlükteki uygulama yönetmeliklerine uygun şekilde yapılabilir.

Bu ekipman üretici tarafından belirlenmiş amacın dışında kullanılırsa, ekipman tarafından sağlanan koruma bozulabilir.

注意事項：在安裝、設定、操作或維護本產品前，請先閱讀此文件以及列於 「其他資源」章節中有關安裝、設定與操作此設備的文件。使用者必須熟悉安裝和配線指示，並符合所有法規、法律和標準要求。

包括安裝、調整、交付使用、使用、組裝、拆卸和維護等動作都必須交由已經過適當訓練的人員進行，以符合適用的實作法規。

如果將設備用於非製造商指定的用途時，可能會造成設備所提供的保護功能受損。

POZOR: Než začnete instalovat, konfigurovat či provozovat tento výrobek nebo provádět jeho údržbu, přečtěte si tento dokument a dokumenty uvedené v části Dodatečné zdroje ohledně instalace, konfigurace a provozu tohoto zařízení. Uživatelé se musejí vedle požadavků všech relevantních vyhlášek, zákonů a norem nutně seznámit také s pokyny pro instalaci a elektrické zapojení.

Činnosti zahrnující instalaci, nastavení, uvedení do provozu, užívání, montáž, demontáž a údržbu musí vykonávat vhodně proškolený personál v souladu s příslušnými prováděcími předpisy.

Pokud se toto zařízení používá způsobem neodpovídajícím specifikaci výrobce, může být narušena ochrana, kterou toto zařízení poskytuje.

UWAGA: Przed instalacją, konfiguracją, użytkowaniem lub konserwacją tego produktu należy przeczytać niniejszy dokument oraz wszystkie dokumenty wymienione w sekcji Dodatkowe źródła omawiające instalację, konfigurację i procedury użytkowania tego urządzenia. Użytkownicy mają obowiązek zapoznać się z instrukcjami dotyczącymi instalacji oraz oprzewodowania, jak również z obowiązującymi kodeksami, prawem i normami.

Działania obejmujące instalację, regulację, przekazanie do użytkowania, użytkowanie, montaż, demontaż oraz konserwację muszą być wykonywane przez odpowiednio przeszkolony personel zgodnie z obowiązującym kodeksem postępowania.

Jeśli urządzenie jest użytkowane w sposób inny niż określony przez producenta, zabezpieczenie zapewniane przez urządzenie może zostać ograniczone.

OBS! Läs detta dokument samt dokumentet, som står listat i avsnittet Övriga resurser, om installation, konfigurering och drift av denna utrustning innan du installerar, konfigurerar eller börjar använda eller utföra underhållsarbete på produkten. Användare måste bekanta sig med instruktioner för installation och kabeldragning, förutom krav enligt gällande koder, lagar och standarder.

Åtgärder som installation, justering, service, användning, montering, demontering och underhållsarbete måste utföras av personal med lämplig utbildning enligt lämpligt bruk.

Om denna utrustning används på ett sätt som inte anges av tillverkaren kan det hända att utrustningens skyddsanordningar försätts ur funktion.

LET OP: Lees dit document en de documenten die genoemd worden in de paragraaf Aanvullende informatie over de installatie, configuratie en bediening van deze apparatuur voordat u dit product installeert, configureert, bediend of onderhoudt. Gebruikers moeten zich vertrouwd maken met de installatie en de bedradingsinstructies, naast de vereisten van alle toepasselijke regels, wetten en normen.

Activiteiten zoals het installeren, afstellen, in gebruik stellen, gebruiken, monteren, demonteren en het uitvoeren van onderhoud mogen uitsluitend worden uitgevoerd door hiervoor opgeleid personeel en in overeenstemming met de geldende praktijkregels.

Indien de apparatuur wordt gebruikt op een wijze die niet is gespecificeerd door de fabrikant, dan bestaat het gevaar dat de beveiliging van de apparatuur niet goed werkt.

Table 1 - Environment and Enclosure

ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.

This equipment is supplied as open-type equipment for indoor use. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA or be approved for the application if nonmetallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for more installation requirements.
- NEMA Standard 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.

Table 2 - North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations:	**Informations sur l'utilisation de cet équipement en environnements dangereux:**
Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.	Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.
WARNING **EXPLOSION HAZARD** • Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. • Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. • Substitution of components may impair suitability for Class I, Division 2. • If this product contains batteries, they must be changed only in an area known to be nonhazardous.	**AVERTISSMENT** **RISQUE D'EXPLOSION** • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. • La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Table 3 - European Hazardous Location Approval

The following applies to products marked CE, Ex **II 3 G**. Such modules:

- Are Equipment Group II, Equipment Category 3, and comply with the Essential Health and Safety Requirements relating to the design and construction of such equipment given in Annex II to Directive 94/9/EC. See the EC Declaration of Conformity at http://www.rockwellautomation.com/products/certification for details.
- The type of protection is "Ex nA IIC T4 Gc" according to EN 60079-15.
- The 5069-IB16 and 5069-IB16F modules comply to standards: EN 60079-0:2012+A11:2013, EN 60079-15:2010, reference certificate number DEMKO 15 ATEX 1484X.
- Are intended for use in areas in which explosive atmospheres caused by gases, vapors, mists, or air are unlikely to occur, or are likely to occur only infrequently and for short periods. Such locations correspond to Zone 2 classification according to ATEX directive 1999/92/EC.

Table 4 - IEC Hazardous Location Approval

The following applies to products with IECEx certification: Such modules:

- Are intended for use in areas in which explosive atmospheres caused by gases, vapors, mists, or air are unlikely to occur, or are likely to occur only infrequently and for short periods. Such locations correspond to Zone 2 classification to IEC 60079-0.
- The type of protection is "Ex nA IIC T4 Gc" according to IEC 60079-15.
- The 5069-IB16 and 5069-IB16F modules comply to standards IEC 60079-0:6th Edition, IEC-60079-15:4th Edition, reference IECEx certificate number IECEx UL 15.0055X.

WARNING: Special Conditions for Safe Use:

- This equipment is not resistant to sunlight or other sources of UV radiation.
- This equipment shall be mounted in an ATEX/IECEx Zone 2 certified enclosure with a minimum ingress protection rating of at least IP54 (as defined in EN/IEC 60529) and used in an environment of not more than Pollution Degree 2 (as defined in EN/IEC 60664-1) when applied in Zone 2 environments. The enclosure must be accessible only by the use of a tool.
- This equipment shall be used within its specified ratings defined by Rockwell Automation.
- Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 140% of the rated voltage when applied in Zone 2 environments.
- The instructions in the user manual shall be observed.
- This equipment must be used only with ATEX/IECEx certified Rockwell Automation backplanes.
- Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Earthing is accomplished through mounting of modules on rail.
- Devices shall be used in an environment of not more than Pollution Degree 2.

Table 5 - Prevent Electrostatic Discharge

ATTENTION: This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- Use a static-safe workstation, if available.
- Store the equipment in appropriate static-safe packaging when not in use.

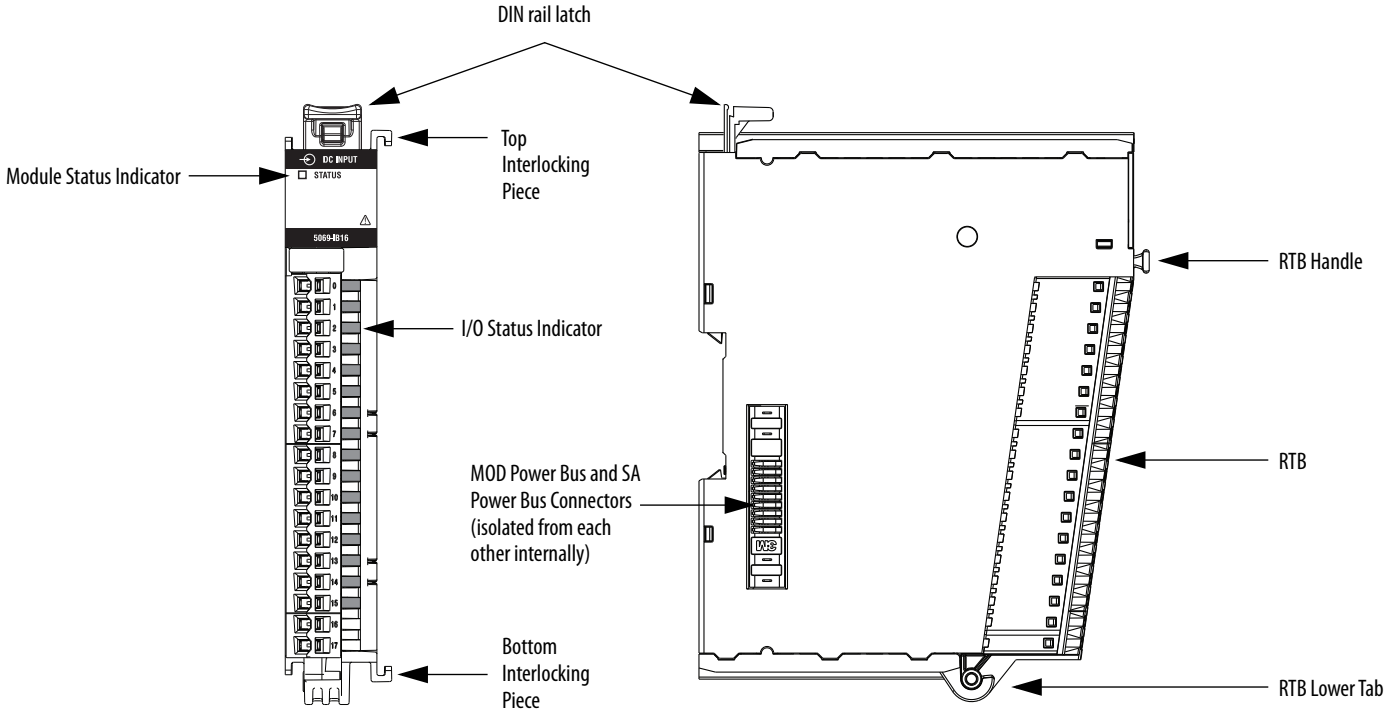
Table 6 - Electrical Safety Considerations

ATTENTION:

- Do not wire more than 1 conductor on any single RTB terminal.
- In case of malfunction or damage, no attempts at repair should be made. The module should be returned to the manufacturer for repair. Do not dismantle the module.
- This equipment is certified for use only within the surrounding air temperature range of 0…60 °C (32…140 °F) The equipment must not be used outside of this range.
- Use only a soft dry anti-static cloth to wipe down equipment. Do not use any cleaning agents.

IMPORTANT Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for the purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability for actual use based upon the examples shown in this publication.

About the Module



Before You Begin

Before you install the module, you must install a 5069 Compact I/O system. At minimum, the system must include a 5069-AEN2TR EtherNet/IP™ adapter and backplane end cap. For more information on how to install a 5069 Compact I/O system, see the 5069 Compact I/O EtherNet/IP Adapter Installation Instructions, publication 5069-IN003.

You can install the module next to any 5069 Compact I/O module.

Required Components

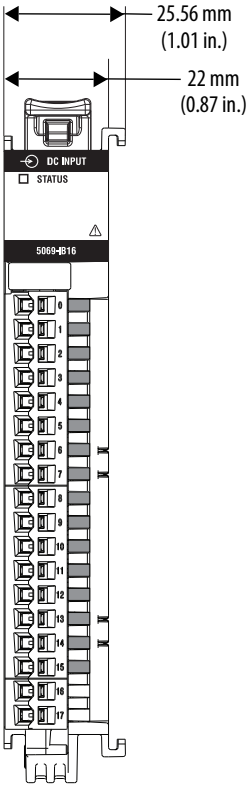
To install the module, you need the physical components that are listed in Table 7.

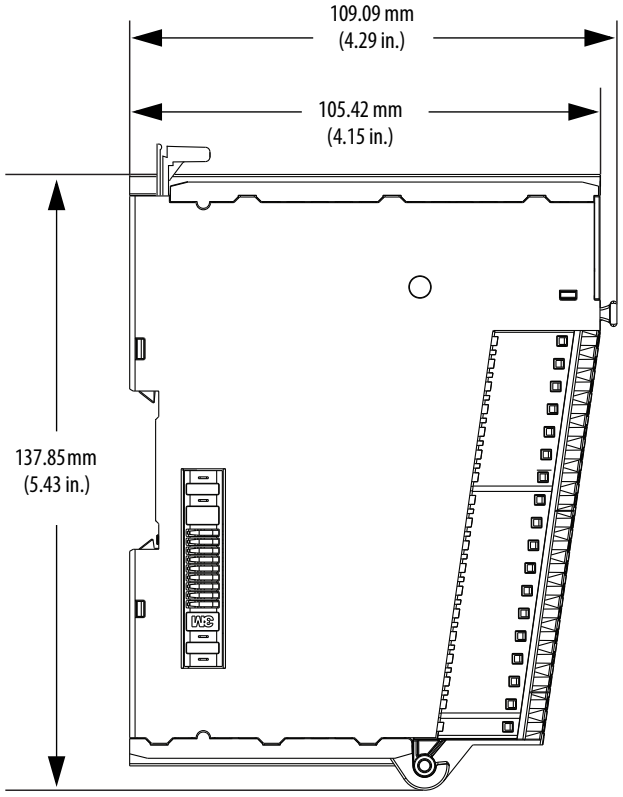
Table 7 - Components Needed for 5069 Compact I/O Module Installation

Component	Description
Removable terminal blocks	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB **IMPORTANT**: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Backplane end cap	A backplane end cap ships with the 5069-AEN2TR EtherNet/IP adapter.
Tools	The following tools are needed: • Screwdriver • Wire stripper • Wires For more information on available wire sizes and wire insulation stripping length, see Module Specifications on page 14.

Dimensions

IMPORTANT: The dimensions for the 5069-IB16F module are the same as those shown here.





Ground Considerations

You must ground DIN rails according to the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1

ATTENTION: This product is grounded through the DIN rail to chassis ground. Use zinc-plated yellow-chromate steel DIN rail to assure proper grounding. The use of other DIN rail materials (for example, aluminum or plastic) that can corrode, oxidize, or are poor conductors can result in improper or intermittent grounding. Secure DIN rail to mounting surface approximately every 200 mm (7.8 in.) and use end-anchors appropriately. Be sure to ground the DIN rail properly. Refer to Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication 1770-4.1 for more information.

You can use the following DIN rails with a 5069 Compact I/O system:

- EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
- EN50022 - 35 x 15 mm (1.38 x 0.59 in.)

System Power Considerations

The 5069-AEN2TR EtherNet/IP adapter provides power to a 5069 Compact I/O system through the following:

- **Module (MOD) power** - System-side power that is required to operate the 5069 Compact I/O system. MOD power is provided through the MOD power RTB and passed across the MOD power bus.
- **Sensor/Actuator (SA) power** - Field-side power that is used to power field-side devices, if necessary. SA power is provided through the SA power RTB and passed across the SA power bus.

  A 5069-FPD field potential distributor can also provide SA power to a 5069 Compact I/O system.

IMPORTANT We recommend that you use separate external power supplies for MOD power and SA power respectively. This practice can prevent unintended consequences that can result if you use one supply.

If you use separate external power supplies, the loss of power from one external power supply does not affect the availability of power from the other supply. For example, if separate external power supplies are used and SA power is lost, MOD power remains available for the 5069 Compact I/O modules.

For more information on MOD power and SA power, see the following:

- EtherNet/IP Communication Modules in Logix5000 Control Systems User Manual, publication ENET-UM004.
- 5000 Series Digital I/O Modules User Manual, publication 5000-UM004
- 5069 Compact I/O Modules Specifications Technical Data, publication 5069-TD001.

Installation Summary

Complete these tasks to install the module.

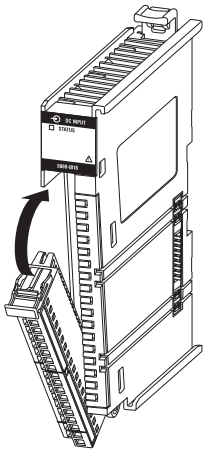
1. Install the Removable Terminal Block
2. Install the Module
3. Install the End Cap
4. Wire the Removable Terminal Block
5. Power the 5069 Compact I/O System

Install the Removable Terminal Block

WARNING: If you connect or disconnect the removable terminal block (RTB) with power applied, an electrical arc can occur. This could cause an explosion in hazardous location installations.

The removable terminal block (RTB) does not support "Removal and Insertion Under Power" (RIUP) capability. Do not connect or disconnect the removable terminal block (RTB) while power is applied. Be sure that power is removed before proceeding.

1. Hook the bottom of the RTB on the module.
2. Push the RTB against the module until the RTB clicks into place.



3. Push the RTB handle against the RTB until you hear another click.

Install the Module

WARNING: If you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations.

The module does not support "Removal and Insertion Under Power" (RIUP) capability. Do not connect or disconnect the module while power is applied. Be sure that power is removed before proceeding.

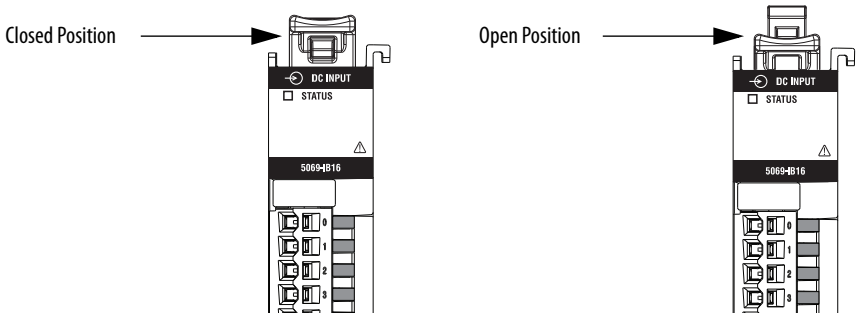
1. Confirm that MOD power and all sources of SA power are turned off.

   In addition to the risks, described in the previous table, that exist because the module does not support RIUP, if you remove the module with power applied, the system MOD power bus and SA power bus are affected. For example, you can interrupt MOD power to the other modules in the system. Unintended consequences can occur as a result.

2. If an end cap is installed on the right-most module that is installed in the system, remove it and keep for later use.

ATTENTION: Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last module on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

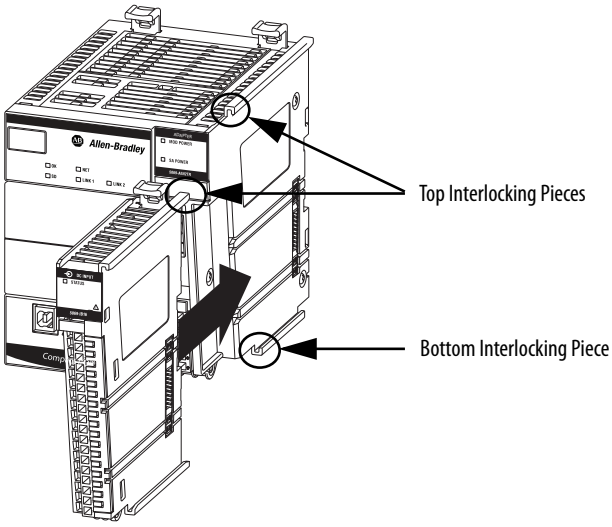
3. Confirm that the DIN rail latch is closed.
4. If the DIN rail latches are open, gently push the rear latch back until the front latch pops up and clicks.



5. Align the interlocking pieces of the module with the device on the left.

   The top interlocking pieces engage first.

6. Push the module toward the DIN rail until a click indicates that the module is locked in place.

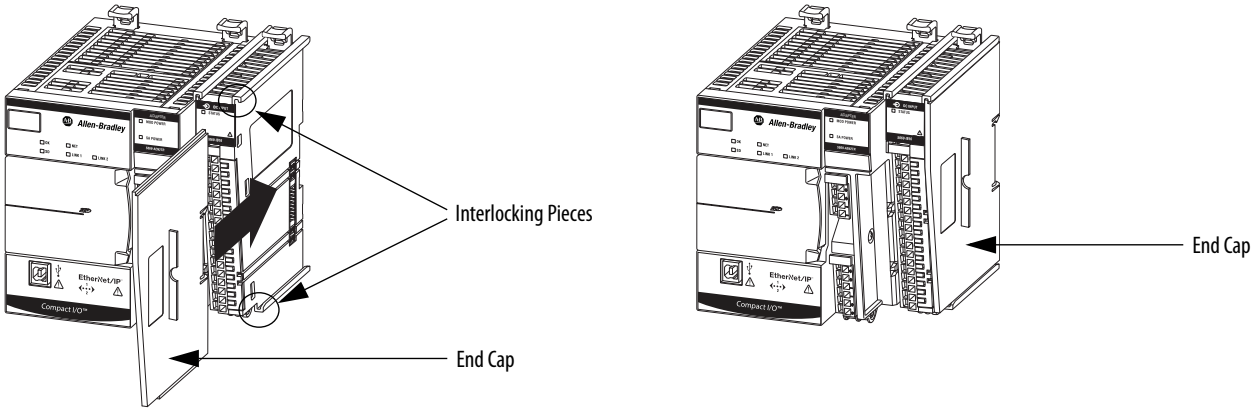


7. Verify that the module is installed in one of the following ways:
   - If the module is installed on the 5069-AEN2TR adapter, the front of the 5069 Compact I/O module is set back slightly from the front of the 5069-AEN2TR adapter.
   - If the module is installed on a 5069 Compact I/O module, the fronts of both modules are flush with each other.

Install the End Cap

You must install an end cap on the last module in your 5069 Compact I/O system.

1. Align the end cap with the interlocking pieces on the module.
2. Push the end cap toward the DIN rail until it locks in place.



Wire the Removable Terminal Block

WARNING: If you connect or disconnect wiring while power is applied, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

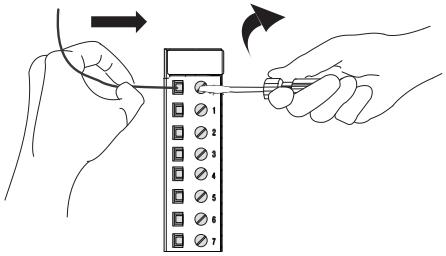
1. Confirm that MOD power and all sources of SA power are turned off.
2. Strip insulation from the wires that you connect to the RTB.

RTB Type	Action
Screw	Strip12 mm (0.47 in) of insulation from the wires.
Spring	Strip 10 mm (0.39 in) of insulation from the wires.

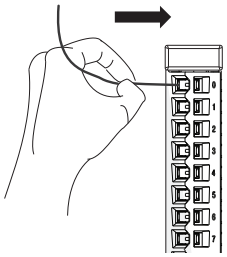
3. Connect the wire to the terminal.

RTB Type	Action
Screw	1. Insert the wire into the terminal. 2. Turn the screwdriver to close the terminal on the wire. Torque the screw to 0.4 N•m (3.5 lb•in).
Spring	Push the wire into the terminal. If the wire is too thin, crimp a wire ferrule on the wire and insert it.

5069-RTB18-SCREW RTB



5069-RTB18-SPRING RTB



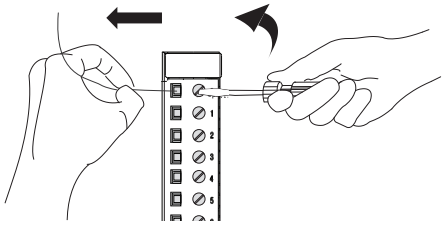
Disconnect Wires from the Removable Terminal Block

WARNING: If you connect or disconnect wiring while power is applied, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

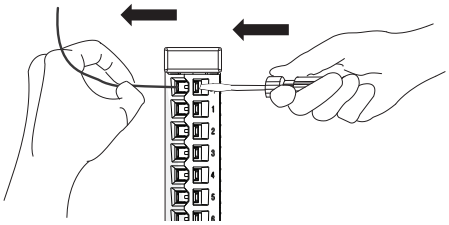
Disconnect wires from the RTB.

RTB Type	Action
Screw	1. Turn the screwdriver counter-clockwise to open the terminal. 2. Remove the wire.
Spring	1. Insert and hold a screwdriver in the right-side terminal. 2. Remove the wire. 3. Pull out the screwdriver.

5069-RTB18-SCREW RTB

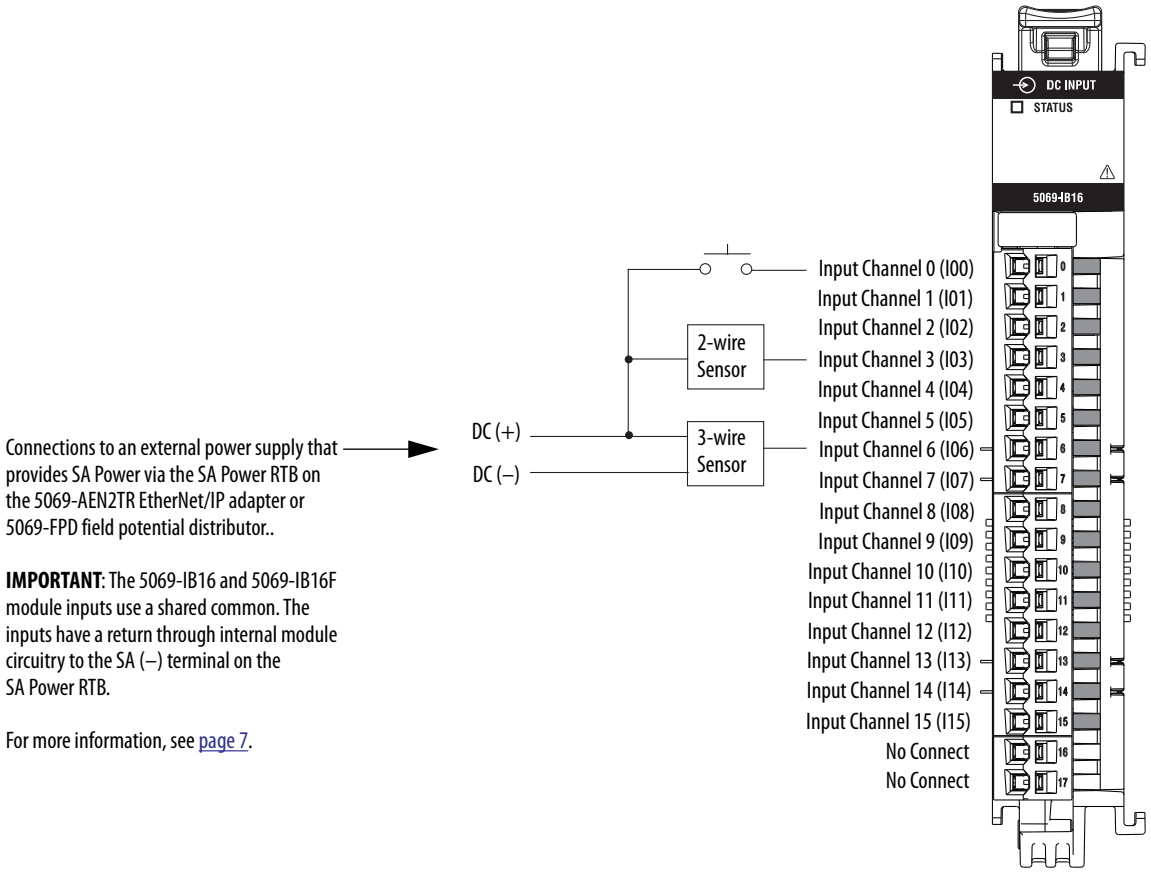


5069-RTB18-SPRING RTB



Wiring Diagram

The following is an example wiring diagram. The example applies to both of the 5069-IB16 and 5069-IB16F digital input modules.



Connections to an external power supply that provides SA Power via the SA Power RTB on the 5069-AEN2TR EtherNet/IP adapter or 5069-FPD field potential distributor..

IMPORTANT: The 5069-IB16 and 5069-IB16F module inputs use a shared common. The inputs have a return through internal module circuitry to the SA (–) terminal on the SA Power RTB.

For more information, see page 7.

Power the 5069 Compact I/O System

After you install all 5069 Compact I/O modules, you can turn on MOD power and, if used, SA power to the 5069 Compact I/O system. The 5069-AEN2TR EtherNet/IP adapter provides power to the system. For more information, see System Power Considerations on page 7.

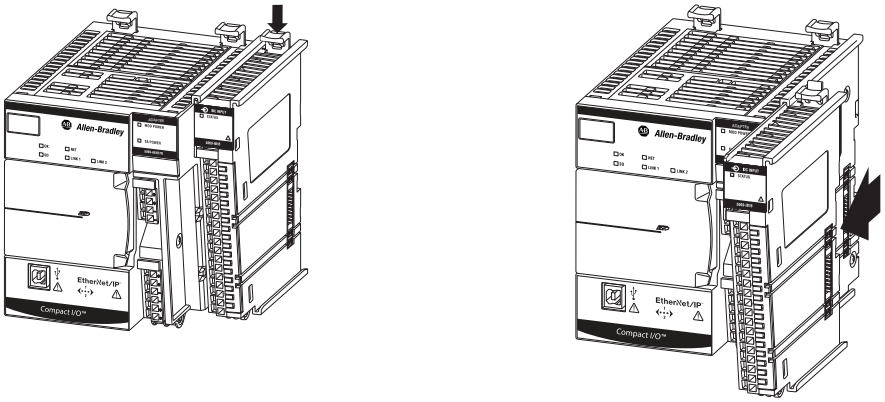
Remove the Module

ATTENTION: Do not remove or replace the module while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.

1. Confirm that MOD power and all sources of SA power are turned off.

IMPORTANT	Before you remove power from the MOD power RTB and, if used, SA power RTB, consider the effect on your 5069 Compact I/O system. When you remove MOD power and SA power from the 5069-AEN2TR EtherNet/IP adapter, you shut down power to all 5069 Compact I(/O modules in the system. That is, all system-side and field-side power is removed. We strongly recommend that you take the appropriate actions to prevent unintended consequences that can result from a system power shutdown before removing MOD power and SA power.

2. If necessary, remove the end cap from the right side of the module.
3. If desired, disconnect wires from the RTB as described on page 11.
4. Press the DIN rail latch down until it clicks and let go of the latch.
5. Pull the module off the DIN rail.



Replace the Module

To replace the module, follow the steps that are described beginning at Installation Summary on page 7.

Module Specifications

The following table lists a subset of the module specifications. For a complete list of specifications, see the 5069 Compact I/O Modules Specifications Technical Data, publication 5069-TD001.

Table 8 - 5069-IB16 and 5069-IB16F Digital Input Module Specifications

Attribute	Value
Temperature, operating • IEC 60068-2-1 (Test Ad, Operating Cold), • IEC 60068-2-2 (Test Bd, Operating Dry Heat), • IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0…60 °C (32…140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Enclosure type rating	None (open-style)
Voltage and current ratings	Input ratings: 4 mA per channel @ 10…32V DC MOD Power: 75 mA @ 18…32V DC MOD Power (Passthrough): 9.55 A @ 18…32V DC SA Power: 200 mA @ 10…32V DC SA Power (Passthrough): 9.95 A @ 10…32V DC Do not exceed 10A MOD or SA Power (Passthrough) current draw
Isolation voltage	300V (continuous), Basic Insulation Type No isolation between SA power and input ports No isolation between individual input ports
Wire size	5069-RTB18-SCREW connections: 0.5…1.5 mm^2 (22…16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SPRING connections: 0.5…1.5 mm^2 (22…16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB18-SCREW connections: 12 mm (0.47 in.) 5069-RTB18-SPRING connections: 10 mm (0.39 in.)
RTB torque specifications (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb·in)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
North American Temp Code	T4
ATEX Temp Code	T4
IECEx Temp Code	T4

Additional Resources

For more information on the products that are described in this publication, use these resources.

Resource	Description
5000 Series Digital I/O Modules User Manual, publication 5000-UM004	Describes how to use the 5069 Compact I/O digital I/O modules.
5069 Compact I/O Modules Specifications Technical Data, publication 5069-TD001	Provides 5069 Compact I/O module specifications.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Rockwell Automation maintains current product environmental information on its website at
http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page.

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